AMENDMENTS TO THE CLAIMS:

1-58. (Canceled)

59.   (New) A computer-implemented method of applying fine-grained transformations during placement synthesis interaction, said method comprising:

creating and updating of bins;

applying the transforms on a bin-based database updated by both placement and synthesis based on an infrastructure;

updating a timing of the applying of the transforms;

invoking a synthesis-placement script;

selecting fine-grained synthesis and placement transforms;

invoking the selected transforms within the synthesis-placement script; and

applying transforms that change the physical, electrical, and Boolean domains concurrently.

60.   (New) The method claimed in claim 59, further comprising:

moving a design space from one point to another by considering concurrently subsets of fine-grained physical transforms, electrical transforms, and Boolean transforms; and

repeating the method until design convergence is achieved.

61.   (New) The method claimed in claim 60, wherein blocks of each of the physical optimizations, electrical optimizations, and Boolean optimizations are interspersed together.

62.   (New) The method claimed in claim 61, wherein each of said optimizations is

represented as a plurality of transformations, such that the optimizations are divided and interspersed together, to examine each of the physical domains, electrical domains, and Boolean domains concurrently.

63.   (New) An apparatus for applying fine-grained transformations during placement synthesis interaction, said apparatus comprising:

a unit for creating and updating of bins;

a unit for applying the transforms on a bin-based database updated by both placement and synthesis based on an infrastructure;

a unit for updating a timing of the applying of the transforms;

a unit for invoking a synthesis-placement script;

a unit for selecting fine-grained synthesis and placement transforms;

a unit for invoking the selected transforms within the synthesis-placement script; and

a unit for applying transforms that change the physical, electrical, and Boolean domains concurrently.

64.   (New) The apparatus claimed in claim 63, further comprising a unit for moving a design space from one point to another by considering concurrently subsets of fine-grained physical transforms, electrical transforms, and Boolean transforms.

65.   (New) The apparatus claimed in claim 64, wherein blocks of each of the physical optimizations, electrical optimizations, and Boolean optimizations are interspersed together.

66.   (New) The apparatus claimed in claim 65, wherein each of said optimizations is

represented as a plurality of transformations, such that the optimizations are divided and interspersed together, to examine each of the physical domains, electrical domains, and Boolean domains concurrently.

67.   (New) A machine-readable medium having stored thereon at least one sequence of instructions that, when executed, causes a machine to perform a method of applying fine-grained transformations during placement synthesis interaction, wherein the instructions when executed are configured to perform:

creating and updating of bins;

applying the transforms on a bin-based database updated by both placement and synthesis based on an infrastructure;

updating the a timing of the applying transforms;

invoking a synthesis-placement script;

selecting fine-grained synthesis and placement transforms;

invoking the selected transforms within the synthesis-placement script, using a driver; and

applying transforms that change the physical, electrical, and Boolean domains concurrently.

68.   (New) The machine-readable medium claimed in claim 67, wherein the instructions are configured to further perform moving a design space from one point to another by considering concurrently subsets of fine-grained physical transforms, electrical transforms, and Boolean transforms; and

repeating the method until design convergence is achieved.

69.   (New) The machine-readable medium claimed in claim 68, wherein blocks of each of the physical optimizations, electrical optimizations, and Boolean optimizations are interspersed together.

70.   (New) The machine-readable medium claimed in claim 69, wherein each of said optimizations is represented as a plurality of transformations, such that the optimizations are divided and interspersed together, to examine each of the physical domains, electrical domains, and Boolean domains concurrently.

RECORD OF PERSONAL INTERVIEW

The courtesy of Examiner Dwin M. Craig in extending a personal interview to the undersigned attorney is acknowledged with appreciation. During the interview, Applicant and Examiner Craig discussed various claims features, including that the transforms are applied concurrently. The Examiner agreed that the recited features are patentably distinct over the prior art of record. However, prior to formally acknowledging patentability, the Examiner noted that an updated search would be necessary.